

KEYSIGHT TECHNOLOGIES (AGILENT HP)

54616C

The Keysight (formerly Agilent / HP) 54616C is a high-performance 500 MHz digital oscilloscope from the popular 54600 Series. Featuring a real-time sample rate of 2 GS/s simultaneously on two channels and a color display, it offers excellent single-shot measurement performance and advanced acquisition modes like 1 ns peak detection.

SPECIFICATIONS

General

Interfaces	None standard (optional GPIB, RS-232, or Parallel interfaces available via expansion modules)
Display	Color CRT display (using liquid crystal color shutter technology)
Calibration Interval	1 year

Physical

Power Supply	100-240 VAC ($\pm 10\%$), 45-440 Hz
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	322 mm × 172 mm × 317 mm mm
Weight	6.2 kg

Vertical System - Analog Channels

Analog Bandwidth (-3 dB)	500 MHz
Single-Shot Bandwidth	500 MHz
Number of Input Channels	2
Input Impedance	1 M Ω (parallel with ~13 pF) or 50 Ω (selectable)
Input Coupling	DC, GND
Vertical Resolution	8 bits
Vertical Sensitivity Range	2 mV/div to 5 V/div
Maximum Input Voltage	400 V (DC + peak AC) at 1 M Ω , 5 Vrms at 50 Ω

Horizontal System

Timebase Range	1 ns/div to 5 s/div
Timebase Accuracy	$\pm 0.015\%$
Horizontal Resolution	100 ps
XY Mode Phase Error	± 3 degrees at 100 kHz
XY Mode X-Axis Bandwidth	500 MHz

Acquisition System

Maximum Real-Time Sample Rate	1 GS/s simultaneously on both channels
Maximum Record Length	5,000 points per channel
Peak Detect	1 ns
Acquisition Modes	Sample, Peak Detect, Averaging
Single-Channel Sample Rate	2 GSa/s
Dual-Channel Sample Rate	1 GSa/s per channel

Trigger System

Trigger Sources	Channel 1, Channel 2, Line, External
Trigger Modes	Auto, Normal, Single, Auto Level
Trigger Coupling	AC, DC, LF Reject, HF Reject, Noise Reject

Waveform Measurements and Analysis

Automatic Measurements	Vpp, Vmax, Vmin, Vtop, Vbase, Vavg, Vrms, Frequency, Period, Rise Time, Fall Time, Positive/Negative Width, Duty Cycle
Waveform Math	Addition, Subtraction, Inversion (FFT optional via expansion module)
Expansion Capabilities	Optional plug-on modules for FFT analysis, non-volatile waveform storage, and remote programming

Connectivity

External Trigger Input	Yes
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Environmental and Compliance

Storage Temperature Range	-40 to +70 °C
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Vertical System

Rise Time (Calculated)	< 700 ps
DC Gain Accuracy	±1.5%
Channel-to-Channel Isolation	> 40 dB at 100 MHz, > 30 dB at 500 MHz

Triggering

Internal Trigger Sensitivity	DC to 100 MHz: 0.35 div or 3.5 mV; 100 MHz to 500 MHz: 1 div or 10 mV
External Trigger Input Range	±4 V
Glitch Trigger Width Range	1.5 ns to 4.19 ms
TV/Video Trigger Formats	NTSC, PAL, SECAM
TV/Video Trigger Modes	Field 1, Field 2, Line

Environmental

Operating Humidity	95% RH at 40 °C
Operating Altitude	Up to 4,600 m (15,000 ft)

Compliance

Safety Standards	CSA C22.2 No. 231, IEC 1010-1
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Memory & Storage

Non-Volatile Setup Memories	16
Non-Volatile Pixel Memories	4

Power

Maximum Power Consumption	220 VA
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TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic Design, Troubleshooting, and Test Automation

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